

# Effectiveness of Early Clinical Exposure as a Motivational Tool to Improve Students' Learning in MBBS Phase 1

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## ABSTRACT

**Aim and background:** Early clinical exposure (ECE) supports intrinsic motivation which is associated with deep learning and better performance. The self-determination theory of motivation in learning proposes that optimal performance of students' results from actions motivated by intrinsic interests or by extrinsic values that are internalized. We propose an ECE module supporting students' three basic psychological needs of relatedness, autonomy, and competence extrinsically to improve students' learning.

**Objectives:** To evaluate the effectiveness of ECE module on students learning attitude and academic performance.

**Materials and methods:** One hundred students of 1st phase MBBS were divided into a control group of first 50 and a study group of next 50 students. Early clinical exposure module for the study group included diagnostic lab and ward visits for three cases (anemia, jaundice, renal failure) in small groups and motivational videos focusing on independent learning. Motivated strategies for learning questionnaire (MSLQ) were taken pre- and post-intervention to know its effect on students learning. The class test was conducted and scores were compared to know its effect on academic performance.

**Results:** Mean comparisons of MSLQ Likert scale responses showed significant improvements in learning strategies of elaboration, organization, and critical thinking among the study group ( $p = 0.005, 0.04$ , and  $0.001$ , respectively) and also motivation for learning as improved self-efficacy compared to the control group ( $p = 0.01$ ) which shows improved self-confidence in their own ability to perform the task. Mean class test score comparison after ECE module showed significant improvement among study group ( $p = 0.001$ ).

**Conclusion:** Our study supports the inclusion of ECE as a motivational tool for learning as it is effective in improving students' learning strategies, motivation to learn, and academic performance.

**Keywords:** Early clinical exposure, Independent learning, Integrated teaching, Learning strategies, Motivation to learn, Self-determination theory. *Indian Journal of Medical Biochemistry* (2021); 10.5005/jp-journals-10054-0179

## INTRODUCTION

The concept of motivation covers our personal as well as professional life. It is generally regarded as a process internally seated which once aroused by an external stimulus; leads to a more intense activity whereby goal-oriented activities are initiated and sustained.<sup>1</sup>

Brewer suggests that teachers should use a variety of alternative teaching methods to capture students' attention and curiosity. Lectures are ranked by students as "a motivational reason to skip classes". So accordingly we should not rely more on lectures but reroute to alternate teaching strategies.<sup>2</sup> But, at present, lectures are the main teaching tools especially in preclinical subjects of phase 1 MBBS. Still, we should try to make learning interesting, interactive, with an appropriate focus on relatedness.

Early clinical exposure (ECE) is "A teaching and learning methodology which fosters exposure of medical students to patients (actual human contact) as early as the first year of medical college, in a social or clinical context that enhances the learning of health, illness or disease, and the role of the health professional".<sup>3</sup> Early clinical exposure can help to instill the skill component of medical education in the first year students helping to minimize the line of demarcation between disciplines. Early experience helps medical students learn, helps them develop appropriate attitudes toward their studies and future practice, and orientates medical curriculum toward society's needs.<sup>4</sup> Students in higher health professional education have an innate responsibility and self-concept of learning things which they need to know when they perform in real-life situations.<sup>5</sup>

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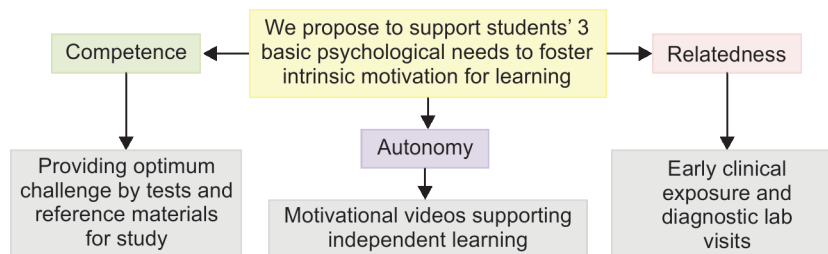
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## Conceptual Framework

Self-determination theory (SDT) of motivation in learning by Deci and Ryan (1985) supports the idea of student's innate curiosity and desire to learn.<sup>6</sup> It postulates that intrinsic motivation and autonomous form of self-regulation are associated with deep learning and better performance. Selection of a student to a medical

**Flowchart 1:** Conceptual basis of motivation in learning by early clinical exposure

course may itself enhance students' motivation but it is temporary.<sup>7</sup> We have to develop strategies to support and enhance three basic psychosocial needs of autonomy, competence, and relatedness to foster intrinsic motivation<sup>8-10</sup> (Flowchart 1).

In this context, we propose to provide extrinsic situational motivation by ECE module which targets a particular lecture or a teaching block, to support basic psychological needs of autonomy, competence, and relatedness which improves classroom performance, understanding, and hence academic performance. Introjections of this extrinsic motivation will improve their learning process by promoting deep learning behavior which enables them to analyze the knowledge of basic science concepts in the context of providing patient care.

## Aim

To assess the effectiveness of ECE as a motivational tool before lectures on student learning in Biochemistry.

## OBJECTIVES

- To assess the effectiveness of the ECE module on students' learning skills and motivation to learn.
- To evaluate the effectiveness of the ECE module on the academic performance of the students.

## MATERIALS AND METHODS

The present study was conducted in the Department of Biochemistry over a period of 2 months (November and December 2017). Institutional ethical clearance was obtained before starting the study.

### Study Participants

One hundred students of MBBS Phase 1.

Participants' written informed consent was obtained after a thorough explanation of the study. The participants were informed that their decision to take part in this study would have no impact on their academic scores and that they could freely decide whether or not to participate in the research.

### Study Design

Quasi-experimental study.

### Intervention

Intervention is the ECE module for a teaching block.

Students were divided into 2 batches of 50 each. Batch A from roll no. 1–50 and Batch B from roll no. 51–100.

## Study Group

Batch B of 50 students was exposed to the new motivational module. Batch A of 50 students acted as a control group. Later on, a cross-over was done to benefit the other batch of 50 students.

## EARLY CLINICAL EXPOSURE MODULE

The topics considered for ECE were Anemia, Jaundice, and Renal failure.

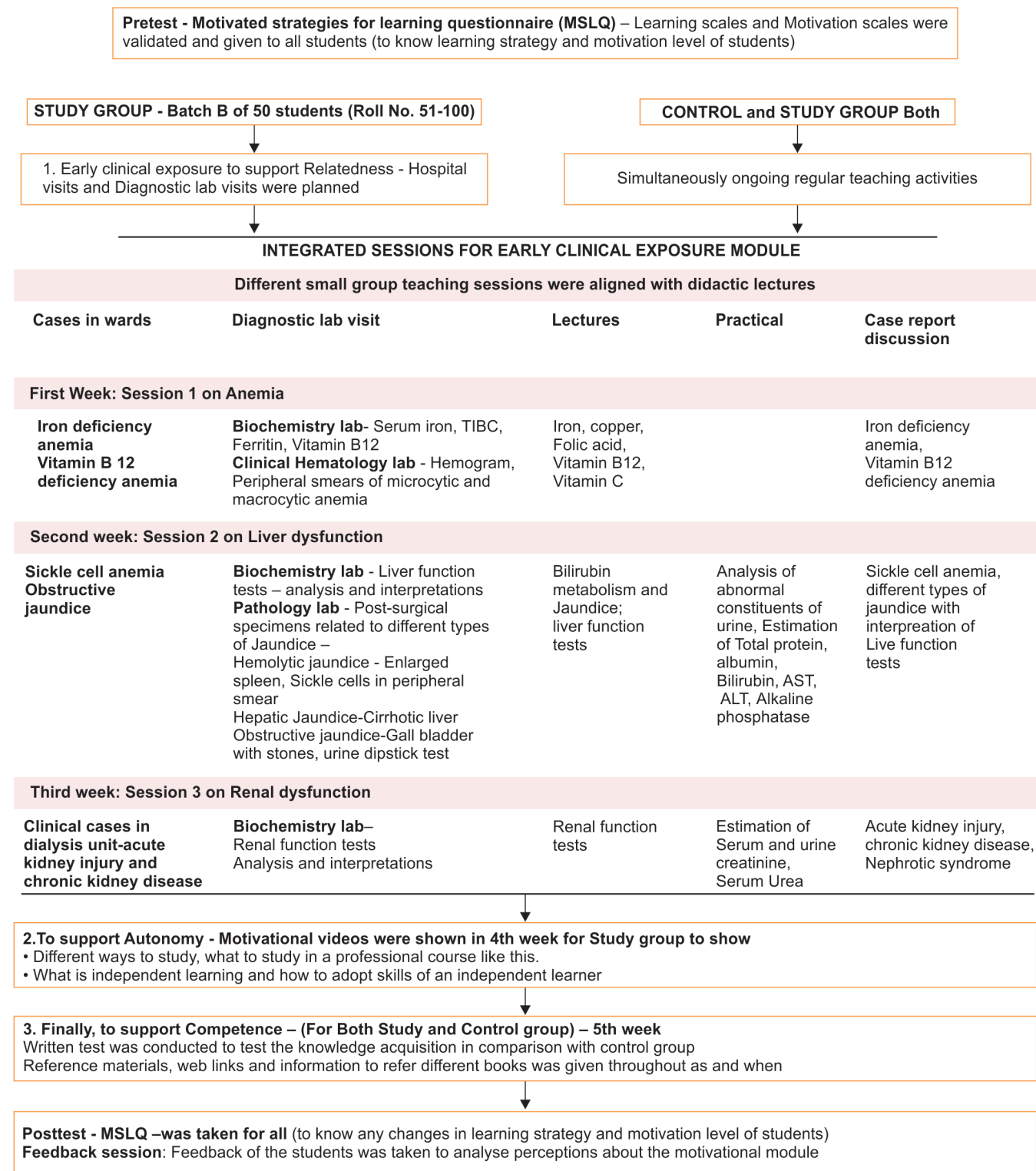
This was planned considering the alignment of the following teaching-learning tools:

- Early clinical exposure sessions were planned for the study group as follows:  
The study group of 50 students was exposed to the following extrinsic academic motivational methods before the lectures to motivate them toward improving their classroom performance and learning. This was in addition to their routine lectures, practical and case-based learning sessions. Students were called in small groups of 10 each for the motivational sessions based on the conceptual framework of SDT, which includes:
  - Case discussion in hospital wards (to provide relatedness)
    - Clinical case of anemia, jaundice, and renal failure was shown by a clinician in small groups at the bedside.
    - Laboratory investigations–investigations related to the workup of anemia, jaundice, and renal failure were shown at clinical biochemistry and hematology lab in the hospital.
  - A small motivational video on how to be an independent learner was shown to students (to make students understand how to take responsibility for their own learning in support of their autonomy).
  - Information regarding the importance of study materials in the form of charts, references (online links/reference books) was highlighted (to enhance competence).
- Regular teaching-learning activities for all students were planned in alignment with ECE sessions (Flowchart 2).

## Data Collection and Analysis

- Feedback on the ECE module: After these sessions, perceptions of students were taken using a pre-reviewed questionnaire and analyzed as a percentage of students showing satisfaction for ECE sessions.<sup>11,12</sup>
- To assess change in learning attitude and motivation to learn: A pre- and post-intervention pre-validated questionnaire adapted from motivated strategies for learning questionnaire (MSLQ)<sup>13</sup> was given before and after the sessions to all students to know if

Flowchart 2: Flowchart of early clinical exposure module



there is any change in the attitude to learn by ECE sessions before lectures and the data was analyzed using suitable statistical tools (Annexure 1).

- To assess the effect of this module on the academic performance of students: To know the effect of this session on the academic performance of the students, the written

test was conducted and student scores were compared with the control group using an appropriate statistical tool by SPSS software.

- Data analysis: Percentage analysis of Likert scale responses, paired *t*-test, independent *t*-test, and Cronbach's alpha was done using excel/IBM SPSS version 20.

**Table 1:** Perceptions of students regarding the early clinical exposure module from feedback questionnaire as percentage (%) of Likert scale responses from 1 to 5 (1—strongly disagree; 2—disagree; 3—cannot say/Neutral; 4—agree; 5—strongly agree)

No	Items	1	2	3	4	5
1	Motivational module has made the subject interesting and enjoyable	0	0	12	66	22
2	Motivational videos inspired me to set ways to improve my study skills	0	4	16	56	24
3	Motivational videos helped me to effectively understand how to plan and study and what to study in a professional course like this	0	2	12	64	22
4	The content of motivational videos did not motivate me to adopt skills of independent learning	36	48	14	2	0
5	Motivational videos were appealing in presentation style	0	6	26	58	10
6	The video session was boring and not relevant	38	48	12	2	0
7	The first exposure to the clinical side made me understand the importance of what we are learning back in the lectures	0	0	4	22	74
8	My understanding of the basic concepts improved after discussions of various lab investigations done in the hospital lab	0	0	6	18	76
9	I would like such sessions to be held more frequently	0	0	4	20	76
10	Lectures did not become more interesting than before	32	54	10	4	0
11	It made me listen to the lectures more attentively	2	2	20	54	22
12	It helped me to retain the content of Biochemistry better, rather than memorizing the facts	0	0	6	50	44
13	I am able to set my learning objectives and plan an action to achieve them	0	0	12	76	12
14	I will be able to perform better in formative tests.	0	0	14	70	16
15	It stimulated me to refer to the study materials before lectures and so I could understand the content of lectures easily	0	0	36	48	16
16	It made me analyze the contents better and try to reason it out	0	0	0	78	22
17	It helped me to realize the importance of long-term learning over short-term learning	0	0	10	48	42
18	I am not able to refer to many resources to get more information	10	28	38	18	6
19	I attended all classes on this topic with enthusiasm and not just for the sake of attendance	0	2	4	52	42
20	I did not get encouraged by this module to become an active learner	48	32	12	2	6

## RESULTS

### Level 1: Reaction–Perception of Students' on Satisfaction and Utility of ECE Module

Perceptions of study group students on the motivational module were analyzed as percentage responses on a 5-point Likert scale using a pre-reviewed questionnaire (*Agree + Strongly agree analyzed together*)

- 90% of students felt that the sessions were very useful.
- 85% of students were satisfied with the motivational sessions.
- >85% of students opined that motivational videos helped them to know what to study in this professional course and how to plan for independent learning.
- All (100%) students felt that the first exposure on to clinical side made them understand the practical relevance of what they are learning back in the lectures.
- >95% of students felt that the understanding of the basic concepts improved after discussions of various investigations done in the hospital lab.
- >80% of students expressed that the subject became interesting and they actively participated in all TL activities (Table 1).

### Level 2: Learning–Knowledge Improvement

Academic performance: Scores of test 1 before the module were similar among both groups. Scores of test 2 after the motivational

**Table 2:** Comparison of Student's test scores (for 30 marks)

	Controls (n = 34) Mean (SD)	Study (n = 33) Mean (SD)	Independent t-test p value
Test 1 (pre)	18.0 (3.39)	18.75 (3.71)	0.38
Test 2 (post)	15.38 (4.47)	19.30 (4.88)	0.001*

\*p value ≤ 0.05 shows a significant difference

module showed significant improvement among the study group compared to the control group ( $p = 0.001$ ) (Table 2).

### Level 2: Learning Skills–Changes in Learning Strategy Scales

Motivated strategies for learning questionnaire adapted from Pintrich 1991[13] was used after validating for reliability using Cronbach's alpha. Motivated strategies for learning questionnaire has learning strategy scales and motivation scales which are divided into various subscales, each having a specified number of items. Motivated strategies for learning questionnaire with 31 items on the motivation scale and 31 items on the learning strategy scale was considered for our study. After analyzing for reliability using Cronbach's alpha, 4 items each from both scales with poor reliability were deleted and finally, we had 27 items each in motivation scales and learning strategy scales. Items were not deleted during data collection in a questionnaire to avoid confusion in the numbering of

**Table 3:** Reliability scores of motivated strategies for learning questionnaire (MSLQ) scales

Component	Subscales (item number*)	Cronbach's alpha <sup>†</sup>
Motivation scales		
Value	1. Intrinsic Goal Orientation (1, 16, 22) The degree to which the student perceives herself to be participating in a task for reasons such as challenge, curiosity, mastery.	0.655
	2. Extrinsic Goal orientation (7, 11, 13) The degree to which the student perceives herself to be participating in a task for reasons such as grades, rewards, performance, evaluation by others, and competition.	0.830
	3. Task value (4, 10, 17, 23, 26, 27) Students' evaluation of how interesting, how important, and how useful the task is. The MSLQ refers to students' perceptions of the course material in terms of interest, importance, and utility.	0.808
Expectancy	4. Control of learning beliefs (9, 18, 25) If students believe that their efforts to study make a difference in their learning, they should be more likely to study more strategically and effectively.	0.629
	5. Self-efficacy (5, 6, 12, 15, 20, 21, 29, 31) Judgments about one's ability to accomplish a task as well as one's confidence in one's skills to perform that task.	0.841
Affect	6. Test anxiety (3, 14, 19, 28) Negatively related to expectancies as well as academic performance	0.780
Learning strategy scales		
Cognitive	1. Rehearsal (5, 9, 27) Reciting and naming strategies are best used for simple tasks and activation of information in working memory rather than the acquisition of new information in long-term memory.	0.660
	2. Elaboration (13, 20, 22, 24, 25, 31) Paraphrasing, summarizing, creating analogies help students store information into long-term memory by building internal connections between items to be learned	0.829
	3. Organization (7, 11, 21) Clustering, outlining, and selecting the main idea in reading passages help the learner select appropriate information and also construct connections among the information to be learned.	0.684
	4. Critical thinking (10, 12, 23, 26) Degree to which students report applying previous knowledge to new situations in order to solve problems, reach decisions, or make critical evaluations with respect to standards of excellence.	0.777
Metacognition	5. Self-regulation (2, 6, 8, 14, 15, 16, 17, 19, 28, 29, 30) Planning (goal setting) and Monitoring (self-testing) assist the learner in understanding the material and integrating it with prior knowledge and Regulating activities assist learners in checking and correcting their behavior as they proceed on a task.	0.701

\*Few items of MSLQ which were having poor reliability are deleted and the items which were considered in our study for analysis are given in parenthesis. MSLQ is given as Annexure 1

<sup>†</sup>Cronbach's alpha value > 0.7 shows good reliability

items, coding, and decoding for analysis. Items with good reliability which were finally used for analysis in each subscale are given in parenthesis in Table 3.

Learning strategy and Motivation scale responses on a 7-point Likert scale from "Not at all true of me" to "Very true of me" were analyzed using IBM SPSS version 20.

Mean comparisons of Likert scale responses from 1 to 7 (Not at all true of me to Very true of me) for each learning subscale showed-

- Independent *T*-test showed significant improvements in learning strategy—Elaboration, Organization, and Critical thinking ( $p = 0.005, 0.01$ , and  $<0.001$ , respectively) among study group compared to control group—Table 4 and Figure 1.
- A paired *t*-test (pre vs post) showed improvement in the first 3 subscales of learning strategy (rehearsal, elaboration,

organization skills) in both studies and controls. But an improvement in the 4th subscale—critical thinking was noted to be significantly more in the study group ( $p < 0.001$ ).

#### Level 2: Learning Attitude—Changes in Motivation Scales

Mean comparisons of Likert scale responses from 1 to 7 for each motivation subscale showed:

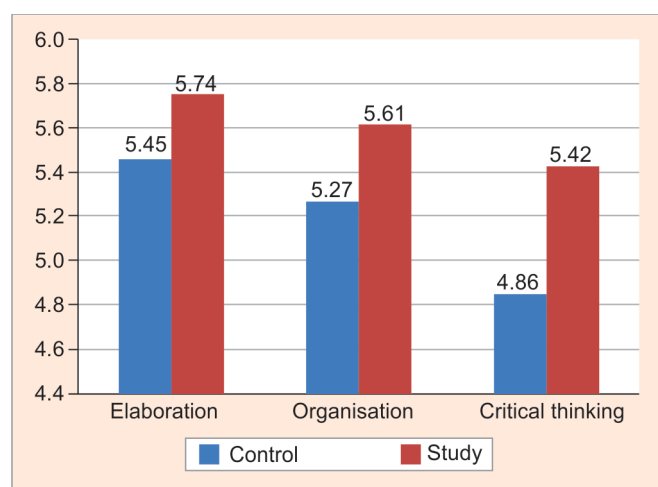
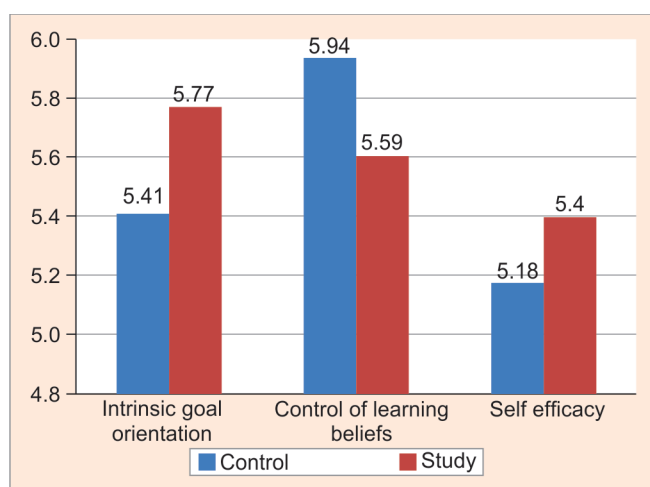
- Independent *T*-test showed significant improvement in the intrinsic goal orientation and self-efficacy subscale of motivation among the study group compared to the control group. However, the control group showed better control of learning beliefs—Table 4, Figure 2.
- A paired *t*-test (pre vs post) did not show any significant changes in motivation levels in both groups.



**Table 4:** Mean score comparison of Likert scale responses (1 to 7) from MSLQ instrument after exposure of study group to early clinical exposure module

Component	Subscales (no. of questions)	Mean $\pm$ SD		<i>p</i>
		Control <i>n</i> = 42	Study <i>n</i> = 39	<i>p</i> * value
Motivation scales (6)				
Value	1. Intrinsic goal orientation (3)	5.41 $\pm$ 1.37	5.77 $\pm$ 0.97	0.02*
	2. Extrinsic goal orientation (3)	4.98 $\pm$ 1.36	4.85 $\pm$ 1.75	0.52
	3. Task value (6)	5.74 $\pm$ 1.04	5.79 $\pm$ 0.96	0.56
Expectancy	4. Control of learning beliefs (3)	5.94 $\pm$ 1.13	5.59 $\pm$ 1.38	0.03*
	5. Self-efficacy (8)	5.18 $\pm$ 1.16	5.40 $\pm$ 1.09	0.01*
Affect	6. Test anxiety (4)	4.18 $\pm$ 1.76	3.92 $\pm$ 1.80	0.18
Learning strategy scales (5)				
Cognitive	1. Rehearsal (3)	4.88 $\pm$ 1.71	5.10 $\pm$ 1.43	0.27
	2. Elaboration (6)	5.45 $\pm$ 1.25	5.74 $\pm$ 0.95	0.005*
	3. Organization (3)	5.27 $\pm$ 1.53	5.61 $\pm$ 1.02	0.04*
	4. Critical thinking (4)	4.86 $\pm$ 1.26	5.42 $\pm$ 1.17	0.000*
Metacognition	5. Self-regulation (11)	5.04 $\pm$ 1.47	5.13 $\pm$ 1.44	0.36

\**p* value  $\leq 0.05$  shows a significant difference

**Fig. 1:** MSLQ-Learning strategy scales: Mean comparisons of Likert scale responses (1 to 7) with significant differences ( $p < 0.05$ )**Fig. 2:** MSLQ-Motivation scales: Mean comparisons of Likert scale responses (1 to 7) with a significant differences ( $p < 0.05$ )

## DISCUSSION

Our study focused on the ECE to MBBS phase 1 students' as a tool to motivate students to learn better. Early clinical exposure was planned before lectures which would enable the students to focus and understand better in lecture classes. Once students observe relevant cases in wards and visit the diagnostic lab to see how the lab tests help in the diagnosis of the condition, it will create interest among students to understand better, as the students will be able to connect things taught in lectures to real-life situations.

Accordingly, our students felt that the ECE module was useful to know how to be an independent learner, to develop an interest in the subject, and to actively participate in learning. Students also opined that the lectures became much more interesting than before as they were able to understand the concept of basic science in relation to the clinical scenario.

Rawekar et al. have reported similar findings that the conduction of ECE created interest and better understanding was strongly agreed by 86 and 72% of the students, respectively, giving

good feedback regarding ECE.<sup>14</sup> It has better acceptability by the students as it is more practically oriented and interesting.<sup>15</sup>

The conceptual basis of our study was the SDT of motivation in learning proposed by Deci and Ryan (1985). Various studies conducted on motivation for learning have noted that students need to be intrinsically motivated to learn which helps them to become independent learners. Intrinsic motivation among students builds over a period of time as they progress from MBBS phase 1 to Internship. By supporting the student's basic psychological needs of autonomy, competence, and relatedness, they can be motivated to learn as they start integrating and internalizing the concepts. Once they get intrinsically motivated, they become lifelong learners with deep learning skills.<sup>8-10</sup> This is one of the important roles to be played by an Indian medical graduate.

Our students felt that their learning strategies showed improvements in how to elaborate by summarizing, how to organize learning by creating connections and how to critically analyze the contents. Students experienced that their cognitive skills have improved from performing simple tasks of

reciting, to just having working memory, to that of higher-order learning skills of critical thinking which will help them in having long-term memory.

Spencer et al. found that direct contact with patients plays a crucial role in the development of clinical reasoning, communication skills, professional attitudes, and empathy.<sup>16</sup> Bell et al. have concluded that real patient learning led to a rich variety of learning outcomes, of which at least some medical students showed high metacognitive awareness.<sup>17</sup>

Learning attitude as a motivation of our students toward learning showed improvement in intrinsic goal orientation where the students participate with interest and improved self-efficacy which shows improved self-confidence in their own ability to perform the task (Table 4). This was evaluated by a pre-validated MSLQ which had learning and motivation scales defined separately. A BEME systematic review by Dornan et al. points out that early experience with clinical cases motivated and satisfied students of the health professions and helped them acclimatize to clinical environments, develop professionally, interact with patients with more confidence and less stress, develop self-reflection and appraisal skill, and develop a professional identity.<sup>18</sup> However the control group had better control of learning beliefs indicating that they believed in strategic planning of studies to improve their learning. Changes in beliefs can happen with outcomes and hence would be expected to develop over a longer period of time.

Improvements in learning strategy and self-efficacy were reflected in the improved academic performance of students in our study. Similar findings have been reported by Das et al. and Tayade et al., wherein they have shown the improvement in knowledge component by MCQs pre- and post-interventions and also improvement in skills by OSPE.<sup>15,19</sup>

Systematic reviews by Dornan et al. and Littlewood et al. concluded that early experience not only helped medical students learn, develop a proper attitude toward their studies but also made their learning more relevant and influenced career options.<sup>4,18</sup> Early clinical exposure also aids students to understand doctor-patient interaction, teamwork, and a feeling of being in the medical institute which requires a humanistic element.<sup>20</sup>

## Implications

Early clinical exposure is the need of the hour to improve students' learning which can be implemented by careful planning of integrated sessions. Students will realize the importance of basic science concepts in the context of solving clinical problems. This is a very important motivational tool especially in MBBS phase 1 as the students can be properly guided toward what is expected out of them in their medical profession. Once students realize the way they need to learn and understand, it leads to the right path toward bringing up confident and competent doctors to cater to societal needs. Students' learning strategy and motivation to learn can be improved by supporting three basic psychological needs of relatedness, autonomy, and competence which fosters intrinsic motivation and stimulates deep learning.

To conclude, our study supports the inclusion of ECE as a motivational tool for learning as it is effective in improving students learning skills, motivation to learn, and also their academic performance.

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**ANNEXURE 1****Motivated Strategies for Learning Questionnaire (MSLQ)**

Adapted from Pintrich PR, Smith DAF, Garcia T, et al. A manual for the use of the motivated strategies for learning questionnaire (MSLQ). Ann Arbor 1991;48109:1259.

**Part A–Motivation**

The following questions ask about your motivation for and attitudes about this class. Remember there are no right or wrong answers; just answer as accurately as possible.

Encircle the relevant number using the scale below to answer the questions. If you think the statement is very true of you, circle 7; if a statement is not at all true of you, circle 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

1	2	3	4	5	6	7
Not at all true of me	Not true of me	Somewhat not true of me	Neutral	Somewhat true of me	True of me	Very true of me
S. no.	Item					Scale
1	In a class like this, I prefer course material that really challenges me so I can learn new things.					1 2 3 4 5 6 7
2	If I study in appropriate ways, then I will be able to learn the material in this course.					1 2 3 4 5 6 7
3	When I take a test I think about how poorly I am doing compared with other students.					1 2 3 4 5 6 7
4	I think I will be able to use what I learn in this course in other courses.					1 2 3 4 5 6 7
5	I believe I will receive an excellent grade in this class.					1 2 3 4 5 6 7
6	I'm certain I can understand the most difficult material presented in the readings for this course.					1 2 3 4 5 6 7
7	Getting a good grade in this class is the most satisfying thing for me right now.					1 2 3 4 5 6 7
8	When I take a test I think about items on other parts of the test I can't answer.					1 2 3 4 5 6 7
9	It is my own fault if I don't learn the material in this course.					1 2 3 4 5 6 7
10	It is important for me to learn the course material in this class.					1 2 3 4 5 6 7
11	The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.					1 2 3 4 5 6 7
12	I'm confident I can understand the basic concepts taught in this course.					1 2 3 4 5 6 7
13	If I can, I want to get better grades in this class than most of the other students.					1 2 3 4 5 6 7
14	When I take tests I think of the consequences of failing.					1 2 3 4 5 6 7
15	I'm confident I can understand the most complex material presented by the instructor in this course.					1 2 3 4 5 6 7
16	In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.					1 2 3 4 5 6 7
17	I am very interested in the content area of this course.					1 2 3 4 5 6 7
18	If I try hard enough, then I will understand the course material.					1 2 3 4 5 6 7
19	I have an uneasy, upset feeling when I take an exam.					1 2 3 4 5 6 7
20	I'm confident I can do an excellent job on the assignments and tests in this course.					1 2 3 4 5 6 7
21	I expect to do well in this class.					1 2 3 4 5 6 7
22	The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.					1 2 3 4 5 6 7
23	I think the course material in this class is useful for me to learn.					1 2 3 4 5 6 7
24	When I have the opportunity in this class, I choose course assignments that I can learn from even if they don't guarantee a good grade.					1 2 3 4 5 6 7
25	If I don't understand the course material, it is because I didn't try hard enough.					1 2 3 4 5 6 7
26	I like the subject matter of this course.					1 2 3 4 5 6 7
27	Understanding the subject matter of this course is very important to me.					1 2 3 4 5 6 7
28	I feel my heart beating fast when I take an exam.					1 2 3 4 5 6 7
29	I'm certain I can master the skills being taught in this class.					1 2 3 4 5 6 7
30	I want to do well in this class because it is important to show my ability to my family, friends, employer, or others.					1 2 3 4 5 6 7
31	Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.					1 2 3 4 5 6 7



## Part B–Learning Strategies

The following questions ask about your learning strategies and study skills for this class. Again, there are no right or wrong answers. Answer the questions about how you study in this class as accurately as possible.

Encircle the relevant number using the scale below to answer the questions. If you think the statement is very true of you, circle 7; if a statement is not at all true of you, circle 1. If the statement is more or less true of you, find the number between 1 and 7 that best describes you.

1	2	3	4	5	6	7
Not at all true of me	Not true of me	Somewhat not true of me	Neutral	Somewhat true of me	True of me	Very true of me
S. no.	Item					
1	When I study the readings for this course, I outline the material to help me organize my thoughts.					1 2 3 4 5 6 7
2	During class time I often miss important points because I'm thinking of other things.					1 2 3 4 5 6 7
3	When reading for this course, I make up questions to help focus my reading.					1 2 3 4 5 6 7
4	I often find myself questioning things I hear or read in this course to decide if I find them convincing.					1 2 3 4 5 6 7
5	When I study for this class, I practice saying the material to myself over and over.					1 2 3 4 5 6 7
6	When I become confused about something I'm reading for this class, I go back and try to figure it out.					1 2 3 4 5 6 7
7	When I study for this course, I go through the readings and my class notes and try to find the most important ideas.					1 2 3 4 5 6 7
8	If course materials are difficult to understand, I change the way I read the material.					1 2 3 4 5 6 7
9	When studying for this class, I read my class notes and the course readings over and over again.					1 2 3 4 5 6 7
10	When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.					1 2 3 4 5 6 7
11	I make simple charts, diagrams, or tables to help me organize course material.					1 2 3 4 5 6 7
12	I treat the course material as a starting point and try to develop my own ideas about it.					1 2 3 4 5 6 7
13	When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.					1 2 3 4 5 6 7
14	Before I study new course material thoroughly, I often skim it to see how it is organized.					1 2 3 4 5 6 7
15	I ask myself questions to make sure I understand the material I have been studying in this class.					1 2 3 4 5 6 7
16	I try to change the way I study in order to fit the course requirements and instructor's teaching style.					1 2 3 4 5 6 7
17	I often find that I have been reading for class but don't know what it was all about.					1 2 3 4 5 6 7
18	I memorize keywords to remind me of important concepts in this class.					1 2 3 4 5 6 7
19	I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.					1 2 3 4 5 6 7
20	I try to relate ideas in this subject to those in other courses whenever possible.					1 2 3 4 5 6 7
21	When I study for this course, I go over my class notes and make an outline of important concepts.					1 2 3 4 5 6 7
22	When reading for this class, I try to relate the material to what I already know.					1 2 3 4 5 6 7
23	I try to play around with ideas of my own related to what I am learning in this course.					1 2 3 4 5 6 7
24	When I study for this course, I write brief summaries of the main ideas from the readings and the concepts from the lectures.					1 2 3 4 5 6 7
25	I try to understand the material in this class by making connections between the readings and the concepts from the lectures.					1 2 3 4 5 6 7
26	Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.					1 2 3 4 5 6 7
27	I make lists of important terms for this course and memorize the lists.					1 2 3 4 5 6 7
28	When studying for this course I try to determine which concepts I don't understand well.					1 2 3 4 5 6 7
29	When I study for this class, I set goals for myself in order to direct my activities in each study period.					1 2 3 4 5 6 7
30	If I get confused taking notes in class, I make sure I sort it out afterward.					1 2 3 4 5 6 7
31	I try to apply ideas from course readings in other class activities such as lecture and discussion.					1 2 3 4 5 6 7